AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

computing row and column vectors by horizontal and vertical projection of pixel intensity values;

computing corner-feature-image positions from the row vectors across rows of pixels and column vectors across columns of pixels from the horizontal and vertical pixel-value projections, respectively;

constructing a feature coordinate system using the computed corner-feature-image positions to index feature images in the scanned image of the array; and

using the coordinate system to index and extract data from feature images within the scanned image of the array.

2. (Previously Presented) A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing an initial feature coordinate system, wherein said constructing an initial coordinate system comprises computing corner-feature image positions and estimating positions of said features other than the corner features based on the computed corner-feature positions and known inter-feature spacings;

rotating the feature coordinate system over a range of rotational angles in order to precisely align the feature coordinate system with feature images within the scanned image of the array; and

using the coordinate system to index and extract data from feature images within the scanned image of the array.

3. (Original) A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing an initial feature coordinate system and rotating the feature coordinate system over a range of rotational angles in order to precisely align the feature coordinate system with feature images within the scanned image of the array;

extracting data from indexed feature images in order to identify strong features with relatively large signal-to-noise ratios;

precisely determining the coordinates of the images of the identified strong features;

using a linear regression technique to refine the feature coordinate system based on the precisely determined coordinates of the images of the identified strong features; and

using the refined feature coordinate system to index and extract data from feature images within the scanned image of the array.

4. (Currently Amended) A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing and refining a feature coordinate system using blob analysis ~~by linear regression analysis to align features of the array with the index of the grid~~;

for each indexed feature image, selecting a set of pixels within the feature image from which to compute one or more feature intensity signals; and

extracting data from the selected set of pixels for each feature image within the scanned image of the array.

5. (Original) A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing and refining a feature coordinate system;

for each indexed feature image, selecting a set of pixels within the feature image from which to compute one or more feature intensity signals; and

extracting two or more background-subtracted and normalized feature signal intensities from the selected set of pixels for each feature image within the scanned image of the array.

6. (Previously Presented) The method of claim 1, wherein said computing corner-feature-image positions comprises estimating an x-coordinate of left-hand-corner-feature-images from a position of a first peak in the column vector and estimating an x-coordinate of right-hand-corner-feature-images from

a position of a last peak in the column vector.

7. (Previously Presented) The method of claim 1, wherein said computing corner-feature-image positions comprises estimating a y-coordinate of upper corner-feature-images from a position of a first peak in the row vector and estimating a y-coordinate of lower corner-feature-images from a position of a last peak in the row vector.

8. (Previously Presented) The method of claim 2, wherein said corner-feature-image positions are calculated based on horizontal and vertical pixel-value projections of said features.

9. (Currently Amended) The method of claim 4, wherein said refining a feature coordinate system further comprises linear regression using positions of strong features identified by said blob analysis.

10. (New) The method of claim 9, wherein said blob analysis comprises calculation of centroids of blobs representing said features, and modifying locations of said features in said feature coordinate system base on said centroids of said blobs.

11. (Previously Presented) The method of claim 4, wherein said set of pixels comprises a subset of all features contained with the feature image, wherein a total number of features contained in said subset is less than a total number of features contained within the feature image.

12. (Previously Presented) The method of claim 3, wherein said rotating the feature coordinate system over a range of rotational angles in order to precisely align the feature coordinate system with feature images within the scanned image of the array comprises application of rotation matrices.